

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-43 (cancelled)

44. (New) A method for determining blood recirculation comprising:
withdrawing blood from a body of a patient through a withdrawal line;
returning blood into the patient's body through a return line;
inducing a succession of variations of value of a blood parameter in the blood flowing in the return line, each of the variations comprising an increase and a decrease of said value of said blood parameter around an average value or around a predetermined profile;

measuring, for each of the variations, at least one value of said blood parameter of the blood flowing in the withdrawal line; and

determining a blood recirculation value in a vascular access of the patient between the return line and the withdrawal line, as a function of said blood parameter values measured for at least one variation and for temporally preceding variations of value of the blood parameter in the blood flowing in the return line.

45. (New) A method according to claim 44, wherein said blood parameter is one of hemoglobin concentration and blood temperature.

46. (New) A method according to claim 44, wherein said succession of variations is induced by varying at least one of:

an ultrafiltration flow ultrafiltered from the extracorporeal blood; and

an infusion flow infused into the extracorporeal blood.

47. (New) A method according to claim 44, further comprising acquiring, for each variation, at least one value indicative of said blood parameter of the blood flowing in the return line; the blood recirculation value being determined as a function of values indicative of said blood parameter of the blood flowing in the return line acquired for at least one variation and for temporally preceding variations.

48. (New) A method according to claim 44, wherein the blood recirculation value is calculated by means of a linear first order model, said first order model having parameters estimated using a method of least squares.

49. (New) A method according to claim 44, wherein said succession of variations is continuous.